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CLAIMS

What is claimed is:

*John M.* 1. A method for production of a monoclonal antibody to an antigen comprising:

5 (a) immunizing an animal, the animal having antibody-producing cells with a manipulated characteristic that facilitates the antibody-producing cell's ability to produce antibodies, with said antigen to permit said antibody-producing cells to produce antibodies to said antigen;

10 (b) removing at least a portion of said antibody-producing cells from said animal,

15 (c) forming a hybridoma by fusing one of said antibody-producing cells with an immortalizing cell wherein said hybridoma is capable of producing a monoclonal antibody to said antigen,

(d) propagating said hybridoma, and

(e) harvesting the monoclonal antibodies produced by said hybridoma.

20 2. The method of claim 1, wherein said manipulated characteristic comprises disrupted peripheral tolerance.

3. The method of claim 1, wherein the animal is selected from the group consisting of a mouse, rat, pig, guinea pig, poultry, a goat, a sheep, primate and a rabbit.

25 4. The method of claim 3, wherein said animal is a mouse.

5. The method of claim 4, wherein said mouse is a transgenic mouse overexpressing CD19.

6. *John M.* The method of claim 1, wherein said antibody-producing cells comprise B lymphocytes.

30 7. The method of claim 1, wherein said monoclonal antibodies produced comprise antibodies having a high affinity for said antigen.

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8. A method for production of a monoclonal antibody to an antigen comprising:

- (a) immunizing an animal, the animal having antibody-producing cells with disrupted peripheral tolerance, with said antigen to permit said antibody-producing cells to produce antibodies to said antigen;
- (b) removing at least a portion of said antibody-producing cells from said animal,
- 10 (c) forming a hybridoma by fusing one of said antibody-producing cells with an immortalizing cell wherein said hybridoma is capable of producing a monoclonal antibody to said antigen,
- (d) propagating said hybridoma, and
- 15 (e) harvesting the monoclonal antibodies produced by said hybridoma.

9. The method of claim 8, wherein said animal is selected from the group consisting of a mouse, rat, pig, guinea pig, poultry, a goat, a sheep, primate and a rabbit.

20 10. The method of claim 9, wherein said animal is a mouse.

11. The method of claim 10, wherein said mouse is a transgenic mouse overexpressing CD19.

12. The method of claim 8, wherein said antibody-producing cells comprise B lymphocytes.

25 13. The method of claim 8, wherein said monoclonal antibodies produced comprise antibodies having a high affinity for said antigen.

30 14. A method for production of polyclonal antibodies to an antigen comprising immunizing an animal having antibody-producing cells with disrupted peripheral tolerance with said antigen to permit said antibody-producing cells to produce antibodies to said antigen

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and separating serum, which contains said polyclonal antibodies, from said animal.

15. The method of claim 14, wherein said animal is selected from the group consisting of a mouse, rat, pig, guinea pig, poultry, a 5 goat, a sheep, primate and a rabbit.

16. The method of claim 15, wherein said animal is a mouse.

17. The method of claim 16, wherein said mouse is a transgenic mouse overexpressing CD19.

18. The method of claim 14, wherein said antibody-producing 10 cells comprise B lymphocytes.

19. A diagnostic assay kit for detecting the presence of an antigen in a biological sample, the kit comprising a first container containing a first antibody capable of immunoreacting with the antigen, wherein the first antibody is produced from an animal having antibody-producing cells with disrupted peripheral tolerance and the first antibody is present in an amount sufficient to perform at least one 15 assay.

20. The assay kit of claim 19, further comprising a second container containing a second antibody that immunoreacts with the first antibody, wherein second antibody is produced from an animal having antibody-producing cells with disrupted peripheral tolerance. 20

21. The assay kit of claim 20, wherein the first antibody and the second antibody comprise monoclonal antibodies.

22. The assay kit of claim 21, wherein said first antibody 25 comprises an antibody having a high affinity for said antigen.

23. The assay kit of claim 20, wherein the first antibody is affixed to a solid support.

24. The assay kit of claim 20, wherein the first and second antibodies each further comprise an indicator.

30 25. An assay kit of claim 24, wherein the indicator is a radioactive label or an enzyme.

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26. A method of producing a non-human animal with an immune system having cells with a predetermined characteristic, the method comprising the steps of:

- 5 (a) obtaining an animal having immune system cells with a particular characteristic;
- (b) obtaining another animal having immune system cells with either a same or a different characteristic from the animal of step (a); and
- 10 (c) breeding the animal of step (a) with the animal of step (b) to produce an animal with an immune system having cells with a predetermined characteristic.

27. The method of claim 26, wherein said animals are selected from the group consisting of a mouse, rat, pig, guinea pig, poultry, a goat, a sheep, primate and a rabbit.

15 28. The method of claim 27, wherein said animals are transgenic animals.

*Actual A2*